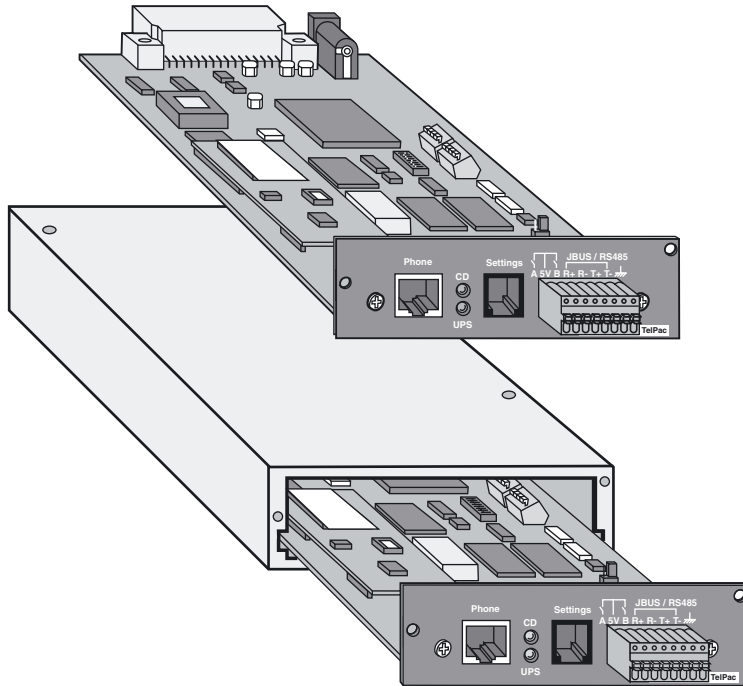# PowerServices™ TelPac

Installation manual

Introduction

Thank you for selecting an APC by Schneider Electric product to protect your electrical equipment.

PowerServices TelPac has been designed with the utmost care.
It comes in 2 versions: card (ref. 66096) or external (ref. 66097 or 66098).
The card version can be installed by the customer or by an APC by Schneider Electric After Sales Service technician.
The external version can only be installed by a specialised APC by Schneider Electric After Sales Service technician.
We recommend you take time to read this manual to take full advantage of the many features of this product.

To discover the entire range of APC by Schneider Electric products, visit our Web site at **www.apc.com** or contact your nearest APC by Schneider Electric representative.

Environment

APC by Schneider Electric pays great attention to the environmental impact of its products during the design and manufacture stages and through to the end of its life cycle.
◗ APC by Schneider Electric products comply with the strictest regulations.
◗ They do not contain CFCs or HCFCs.
Recycling of packaging
Packaging has been designed to be recycled. Please make sure it is correctly recycled (in compliance with applicable regulations).
Recycling of products at the end of their life cycle
APC by Schneider Electric undertakes to recycle all recovered products at the end of their life cycle in installations complying with applicable regulations. Please contact our sales office.

See the environment section on our Web site at **www.apc.com**.

Special precautions

◗ If the card or external unit must be stored prior to installation, always store in a dry location.
◗ Storage temperature range: -10ºC to +70ºC.

Foreword

EMC compatibility

The **PowerServices TelPac** card and external versions comply with the following standards, on condition that they are installed and used in compliance with their intended use and manufacturer's instructions:

◗ Safety standards for IT equipment: **EN 60950/A11** (1998).
◗ EMC: **EN 61000-6-2** (1999), **EN 61000-6-3** (2002).

The **PowerServices TelPac** card and external versions comply with the following European directives:

◗ Low voltage: **73/23/EEC** and **93/68/EEC**.
◗ EMC: **89/336/EEC** and **93/68/EEC**.

Federal Communication Commission (FCC) statement

Part 15

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Part 68

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules.

Radio and Telecommunications compatibility

The **PowerServices TelPac** card and external versions comply with the European R&TTE directive, on condition that they are installed and used in compliance with their intended use and manufacturer's instructions.

Foreword

Modem compatibility and supported countries

The modem integrated in the **PowerServices TelPac** card is compatible with European standard CTR21 (01.98) in accordance with Council Decision 98/482/EC.

List of countries supported by the modem				
Australia Austria Belgium Brazil Bulgaria Canada China Czechoslovakia	Denmark Finland France Germany Greece Hong Kong Hungary India	Ireland Israel Italy Japan Korea Luxembourg Malaysia Mexico	New Zealand Netherlands Norway Philippines Poland Portugal Russia Singapore	South Africa Spain Sweden Switzerland Taiwan United Kingdom United States

Foreword

Pictogram symbols

⚠	Important instructions that must always be followed.
ⓘ	Information and advice.
◁	Visual indication.
☞	Action.

UPS :   **U**ninterruptible **P**ower **S**ystem.

The conventions used to represent indicator lights in the illustrations are as follows:

○	Indicator off.
☀	Indicator on.
☀	Flashing Indicator.

Contents

Contents

1. Presentation

1.1 Unpacking and checking the contents

66096

Content of the card version
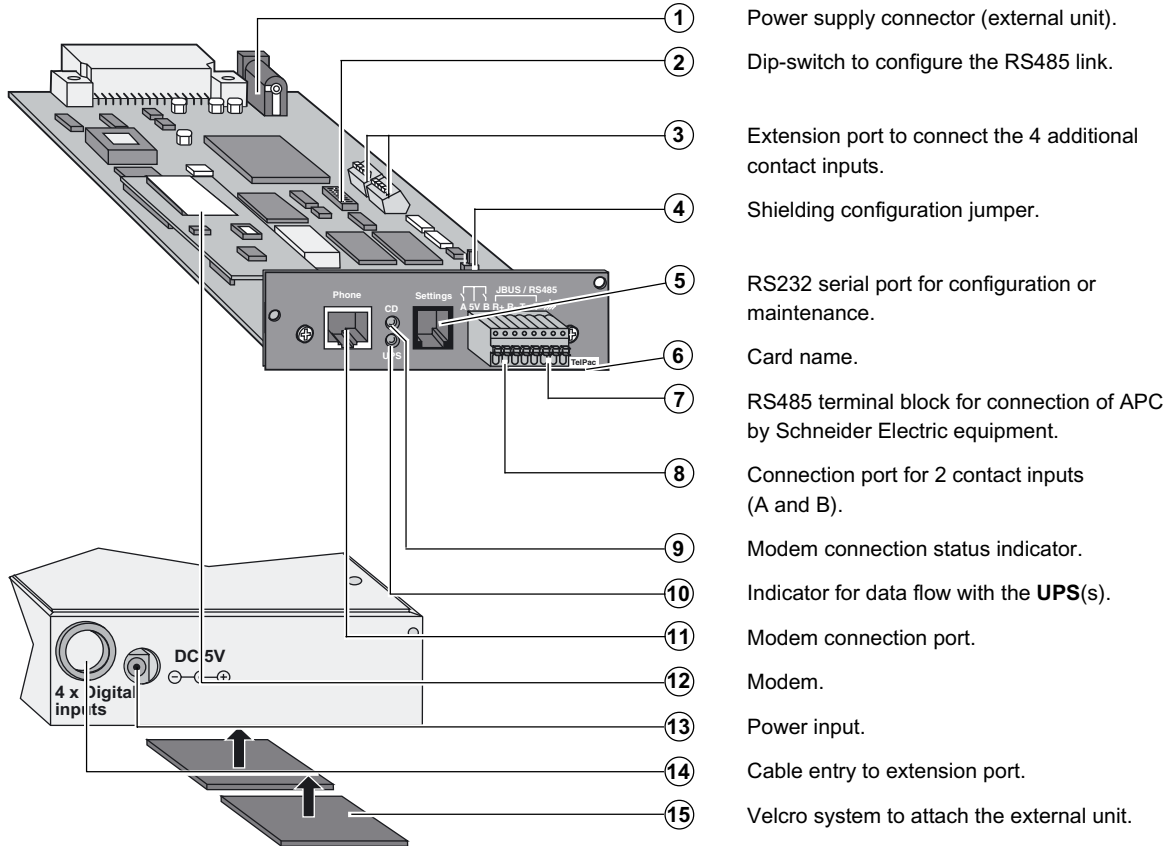**A: PowerServices TelPac** communication card.
B: cover plate specifically designed for **MGE™ Galaxy™ PW UPS**s.
C: 5m telephone cable equipped with RJ11 plugs.
D: 2.5m serial communication cable used for configuration and maintenance operations.
E: 3 warning labels.
F: this manual.
G: information form needed to activate Teleservice.

66097, 66098

Content of the external version
A: PowerServices TelPac external communication unit with its fixing kit.
C: 5m telephone cable equipped with RJ11 plugs.
D: 2.5m serial communication cable.
E: 3 warning labels.
F: this manual.
G: information form needed to activate Teleservice.
H: UPS link cable and fixing accessories.
I: cleaning kit.
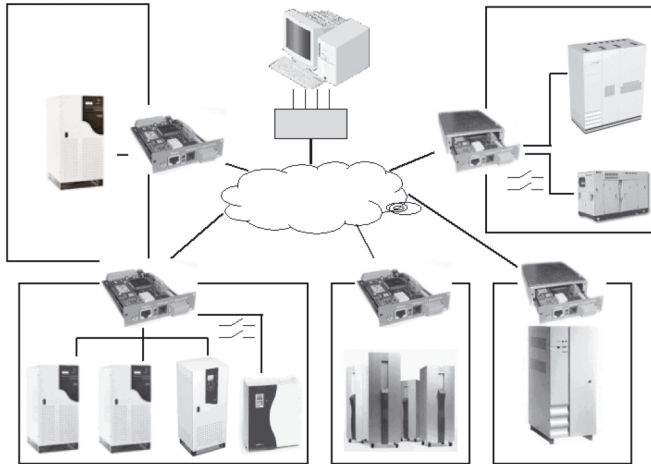**J:** plug-in 5V DC power adapter.

1. Presentation

1.2 Overview

1. Power supply connector (external unit).

2. Dip-switch to configure the RS485 link.

3. Extension port to connect the 4 additional contact inputs.

4. Shielding configuration jumper.

5. RS232 serial port for configuration or maintenance.

6. Card name.

7. RS485 terminal block for connection of APC by Schneider Electric equipment.

8. Connection port for 2 contact inputs (A and B).

9. Modem connection status indicator.

10. Indicator for data flow with the **UPS**(s).

11. Modem connection port.

12. Modem.

13. Power input.

14. Cable entry to extension port.

15. Velcro system to attach the external unit.

1.3 Functions

PowerServices TelPac enables connection of one or more products to the APC by Schneider Electric Teleservice centre via an analogue telephone line.

Several APC by Schneider Electric products can be connected via a JBUS / RS485 connection.

Connection of other equipment not supplied by APC by Schneider Electric is possible via a dry contact connection.

The card version is designed for insertion in a **UPS** with a specific communication card slot.

The external version is designed for installation in a **UPS** without a specific communication card slot.

1. Presentation

1.4 Technical data sheet

Functions	Parameters	Characteristics/Default values	Possible values
RS232 Port	‣ Rate ‣ Data bits ‣ Stop bits ‣ Parity	‣ 9600 ‣ 8 ‣ 1 ‣ None	‣ 9600 ‣ 8 ‣ 1 ‣ Even, odd
RS485 Port	‣ Rate, bits, stop ‣ Parity ‣ Mode ‣ Master / slave ‣ Bias ‣ Impedance matching ‣ Cable cross-section	‣ 1200, 8, 1 ‣ None ‣ 2 wires ‣ Master ‣ With ‣ Without ‣ 0.08 - 0.6 mm^2 (28/20 AWG)	‣ See technical support documentation ‣ 2 wires / 4 wires ‣ Master ‣ With / without ‣ With / without
Modem	‣ Analogue ‣ Country ‣ Protection	‣ V.34/33.6 kbps ‣ Error correction: V.42 LAPM and MNP 2-4 ‣ Data compression: V.42b and MNP5 ‣ Works with 39 country profiles ‣ European CTR21 compatibility ‣ Line protection included	
Contact inputs	‣ Dry contacts ‣ Number ‣ Distance	‣ Normally open (NO) 0.08 - 0.6 mm^2 (28/20 AWG) ‣ 2 (card version) ‣ 2+4 (external version) 0.08 - 0.5 mm^2 (28/20 AWG) ‣ 10m maximum	‣ NO / NC ‣ 0 to 2 ‣ 0 to 6
Power supply (external version)	‣ Voltage ‣ Current	‣ 5V DC ‣ 1A	

Comment: only APC by Schneider Electric can be connected to the RS485 link.

1.5 Indicator lights

Status	Green UPS indicator ⑩	Card version	External version
1		Self tests	**UPS** communication fault
2		Card fault	Card fault
3	1 sec	Waiting for **UPS** communication	Waiting for **UPS** communication
4		Exchanging data with **UPS**	Exchanging data with **UPS**

Status	Red CD indicator ⑨	Card version	External version
1		Modem connected	Modem connected
2		Modem not connected. Communication with all remotely monitored **UPS**s OK	Modem not connected. Communication with all remotely monitored **UPS**s OK
3	1 sec	Communication with at least one of the remotely monitored **UPS**s NOK	Communication with at least one of the remotely monitored **UPS**s NOK
4		Modem connecting [1]	Modem connecting [1]

(1): When status 3 and 4 are present at the same time, status 4 is indicated.

2. Installation

2.1 Procedure

1 - Install the **PowerServices TelPac** kit using the present manual.
2 - Fill in the information form.
3 - Send the form to your Teleservice centre (by Fax or Internet).
4 - Your centre will activate this service.
5 - You receive an acknowledgement of receipt.

The information form must be sent back in order to trigger remote monitoring of your equipment.

2.2 Preliminary check

Before starting the installation:
◗ Make sure that an analogue type telephone outlet with an RJ11 jack is available in the vicinity of the **UPS**.
◗ If the telephone outlet is not RJ11 type, use an adapter. The telephone line must be authorised to call the Teleservice centre 7 days a week.
◗ If no electrical outlet is available on the **UPS** on which the **PowerServices TelPac** is to be installed, connect the power cord to an outlet protected by the **UPS**.

2.3 The various installation types

There are two types of installation:
- Single-unit: only one **UPS** is remotely monitored by **PowerServices TelPac.**
- Multi-unit: several **UPS**s are remotely monitored by one single **PowerServices TelPac.**

Multiple unit installation is not dealt with in this manual. It requires a special study taking into account the configurations existing on the site. SUBD9 / Terminal converters (Ref. 34003755) are available from the Logistics department (LDS) in order to simplify network cabling. For more information, please refer to the APC by Schneider Electric technical support documentation.

Remote monitoring	Installation type	UPS connected to the telephone line	Version to be installed	Other accessories required	Authorised installer
One UPS	Single-unit	**MGE™ Galaxy™ PW** **MGE™ Galaxy™ 3000 / 5000** **MGE™ Galaxy™ 6000 / 9000** **MGE™ Upsilon™ STS** **Comet S31** **Others**	Card Card External unit Card External unit External unit	No No Yes [1] No Yes [2] Yes [4]	Customer/APC Services Customer/APC Services APC Services Customer/APC Services APC Services APC Services
Several UPSs or products	Multi-unit	**MGE™ Galaxy™ PW** **MGE™ Galaxy™ 3000 / 5000** **MGE™ Galaxy™ 6000 / 9000** **Comet S31** **Others**	Card Card External unit External unit External unit	Yes [3] Yes [3] Yes [3] Yes [3] Yes [4]	APC Services APC Services APC Services APC Services APC Services

(1): **MGE™ Galaxy™ 6000 / 9000** must be equipped with at least one JBUS / RS485 communication card with a free port (COM2)

(2): **Comet S31** must be equipped with one JBUS / RS485 communication card. A protected and UPS-secured outlet (1A) must be available in the vicinity of the **UPS**.

(3): Each additional **UPS** must be equipped with a JBUS / RS485 communication card and a converter.

(4): The connection is made in this case via the contact type inputs.

2. Installation

2.4 Recommendations

To ensure continuous remote monitoring of your equipment, the unit must remain permanently connected to the telephone network once installed. Regular checks should be made to ensure that it is working properly via the indicator light on the front of the card or external unit (see section 1.5 "Indicator lights").

When working on your installation, always disconnect the telephone line to avoid any unwanted alarms being sent to the Teleservice centre.

2.5 Fitting the warning label

A set of yellow warning labels is provided in the **PowerServices TelPac** kit.
This label is designed to warn APC by Schneider Electric field technicians that the equipment is being remotely monitored and that work on equipment connected to **PowerServices TelPac** must only be performed once the telephone line has been disconnected.
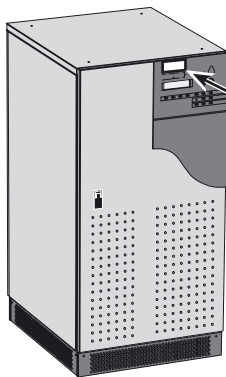
In the case of "Single-unit" remote monitoring (one product), the label is placed on this unit, near the control buttons (see illustration).

In the case of "Multi-unit" remote monitoring (several products), the labels are placed near the control buttons on each product .
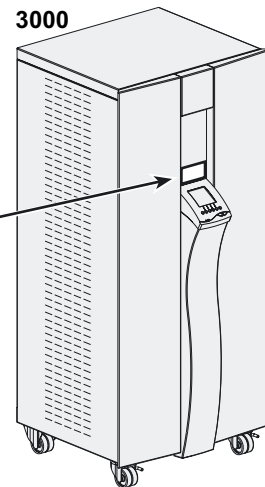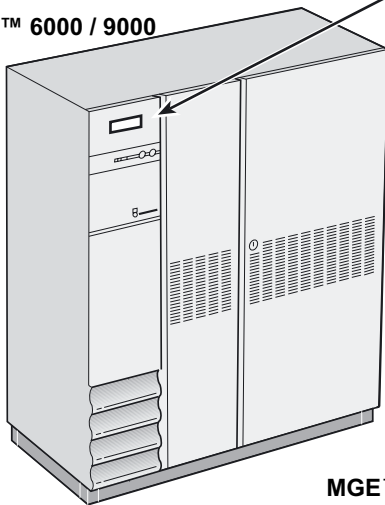
2. Installation
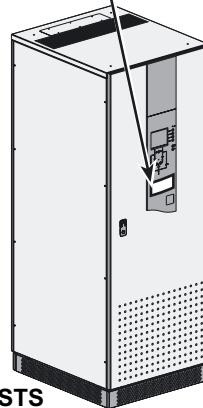
MGE™ Galaxy™ PW

MGE™ Galaxy™ 3000

APC ATTENTION : Onduleur sous Teleservice
WARNING: UPS under Teleservice

Ne pas mettre hors tension sans avoir au préalable
déconnecté la ligne téléphonique
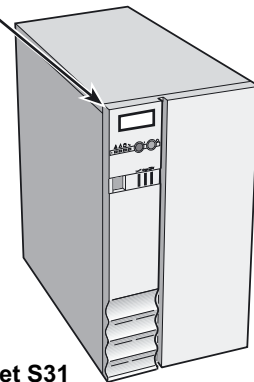*Do not switch off without first disconnecting*
the telephone line

MGE™ Galaxy™ 6000 / 9000

MGE™ Upsilon™ STS

Comet S31

2. Installation

2.6 Setting up the RS485 link
General

For **UPS**s equipped with the **PowerServices TelPac** external version (see table section 2.3 "The various installation types"), communication between the **UPS** and the external unit is achieved via a RS485 link in 2-wire mode.
The link works using the master-slave mode, with the **PowerServices TelPac** always being the master.
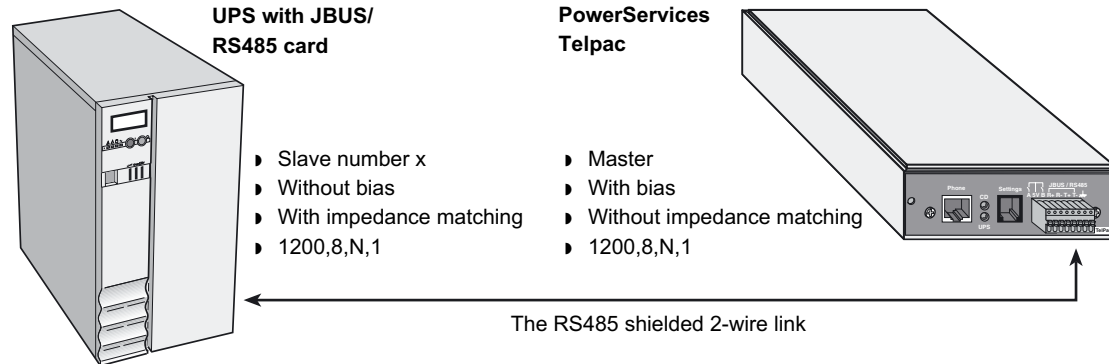Standard practice is to add line bias at the network master and impedance matching at the end of the line on the slave side.
The line must only be biased at one point.

"Single-unit" type installation

The external unit is pre-configured to be directly operational. No special configuration is necessary for a "Single-unit" type installation of the external unit with a **MGE™ Galaxy™ 6000 / 9000** or **Comet** type **UPS**.
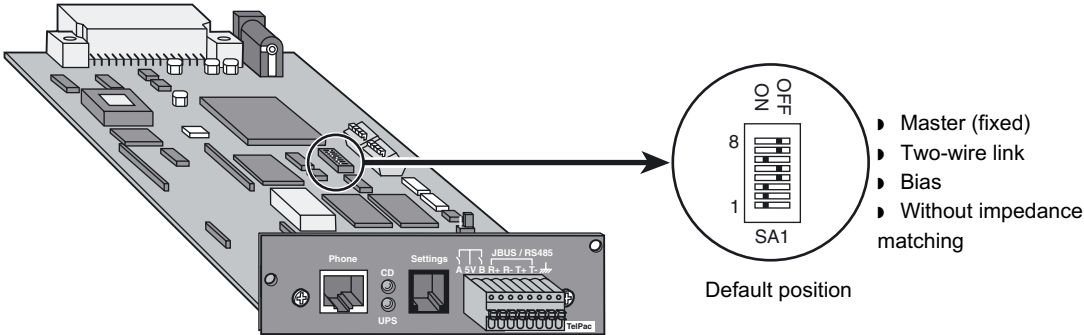Configuration of communication parameters (mode, rate, etc.) is carried out on the RS485 cards on the respective **UPS**s (see "Configuring the RS485 card for **Comet**" or "Configuring the RAUZ card for **MGE™ Galaxy™ 6000 / 9000**").

UPS with JBUS/RS485 card
- Slave number x
- Without bias
- With impedance matching
- 1200,8,N,1

PowerServices Telpac
- Master
- With bias
- Without impedance matching
- 1200,8,N,1

The RS485 shielded 2-wire link

2. Installation

Impedance matching and bias settings

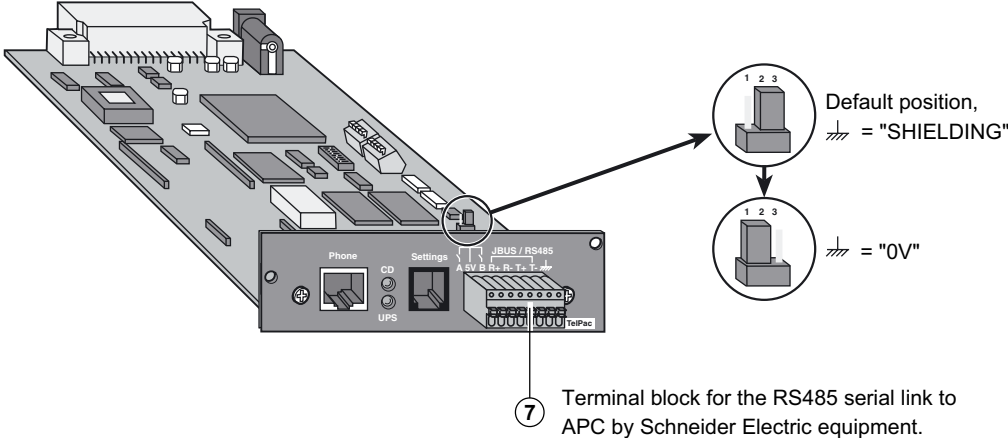If a specific adjustment is required on the RS485 link, see the settings on DIP switch SA1:

- ◗ Master (fixed)
- ◗ Two-wire link
- ◗ Bias
- ◗ Without impedance matching

Default position

Switch number	Function	Switch number	Function
1	**T+** to **R+** connection	5	**R+** 0V bias
2	**T-** to **R-** connection	6	**T-** +5V bias
3	**T+** 0V bias	7	**T+ T-** impedance matching
4	**R+ R-** impedance matching	8	**R-** +5V bias

Example: SA1.6 = ON, T- has a +5V bias,

SA1.6 = OFF, T- does not have a +5V bias.
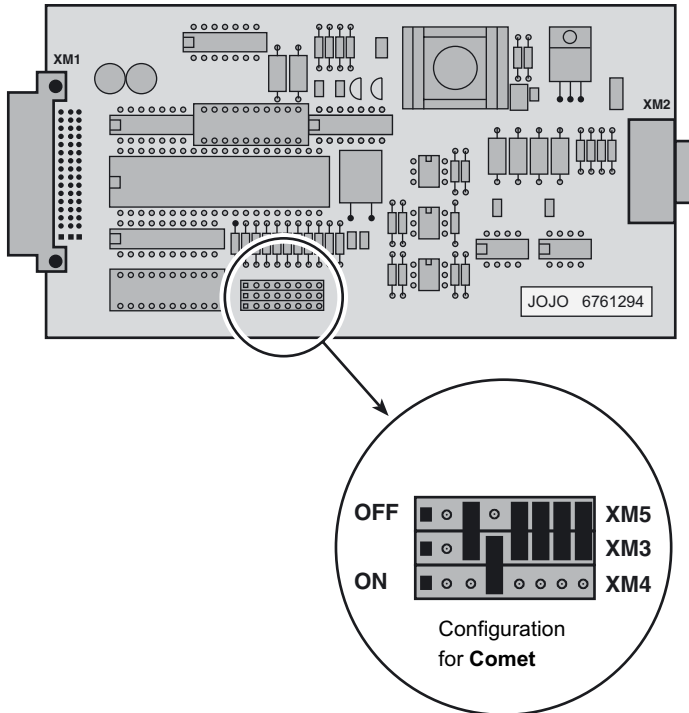
2. Installation

Configuring the shielding terminal

When electrical measurements are to be made on the RS485 link, it is possible to configure the shielding terminal ⏚ of terminal block ⑦ as a "0V" terminal. The holes above each terminal allow a measurement probe to be inserted.

Default position,
⏚ = "SHIELDING"

⏚ = "0V"

Terminal block for the RS485 serial link to APC by Schneider Electric equipment.

⑦

2. Installation

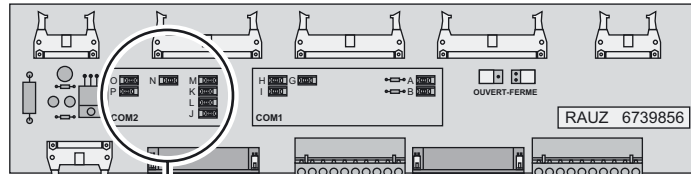## Configuring the RS485 card for Comet

The settings proposed below comply with the recommended configuration (see section "Single-unit type installation").
They must be made before installing and commissioning the **PowerServices TelPac** external unit.
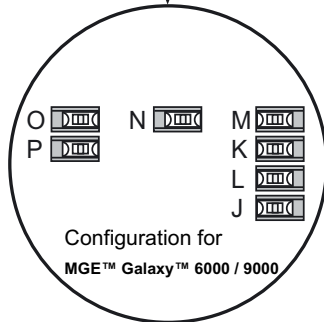The slave number is set to 1 by default. Parameters may be set using **UPS Tuner** or **Soft-Tunor**.

Configuration
for **Comet**

2. Installation

Configuring the RAUZ card for MGE™ Galaxy™ 6000 / 9000

The settings proposed below comply with the recommended configuration (see section "Single-unit type installation").
They must be made before installing and commissioning the **PowerServices TelPac** external unit. The serial link format and the slave number should be set using **UPS Tuner** or **Soft-Tunor**.
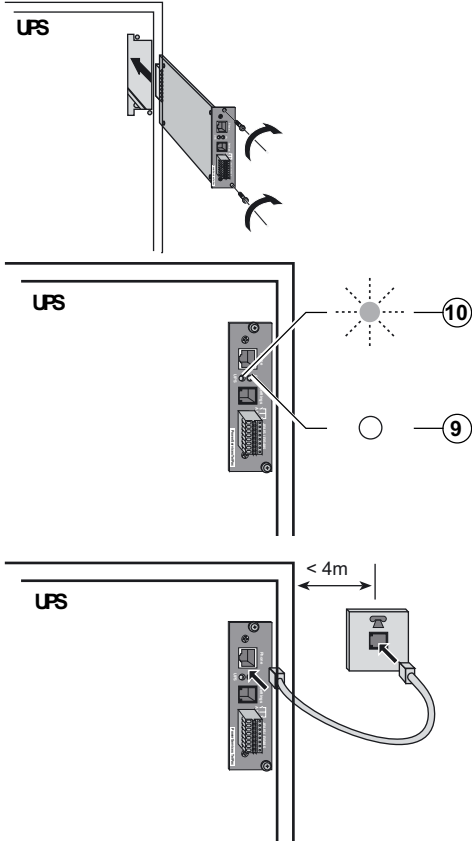
Default configuration of the card

Configuration for
MGE™ Galaxy™ 6000 / 9000

Also check that the XC11 jumper at the edge of the GTCZ (or GT2Z) card is mounted in the JBUS position.
The card has a mark printed on it to identify the position.

2.7 Installing the PowerServices TelPac card

N.B.: For **MGE™ Galaxy™ PW UPS**s, first attach the cover plate provided in the pack.

Installation

It is not necessary to shut down the **UPS**.

◗ Unscrew and remove the cover plate of one of the free communication card slots in the **UPS**.

◗ Insert the card and secure it using the screws.

Check the indicator lights (see section 1.5 "Indicator lights")

◗ Check the status of the UPS indicator light ⑩:
- on steady for 5s (status 1 in the table),
- then regular flashing every second during the start-up phase (status 3 in the table),
- lastly, random flashing during data exchange with the **UPS** (status 4 in the table).

◗ Check the status of the CD indicator light ⑨:
- off for 5s,
- then flashing during the start-up phase (status 3 in the table),
- lastly, off (status 2 in the table).

Connection

◗ Connect the telephone cable to the card's phone port on one end and the telephone outlet on the other. If the wall outlet is not compatible with the connector proposed on the cable, use an adapter.

Installation is now complete. **PowerServices TelPac** is operational. Move on to stage 2 (see section 2.1 "Procedure").

2. Installation

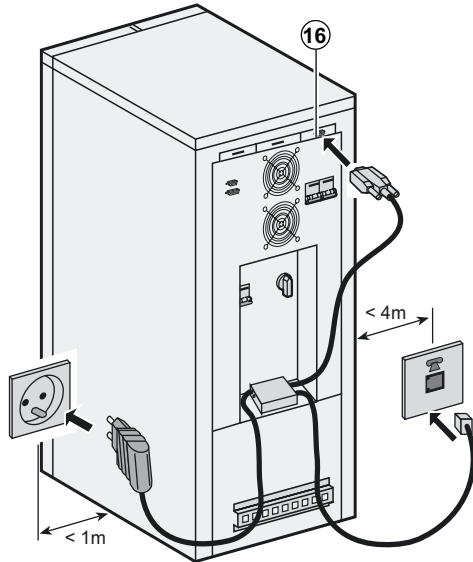## 2.8 Installation of the PowerServices TelPac external unit for Comet UPSs

For this installation it is necessary to de-energise the **UPS**. The various **PowerServices TelPac** components do not present an electrocution hazard for the installer.

It is necessary to initially check:

◗ That the **UPS** is equipped with a JBUS/RS485 communication card ⑯ in one of its slots situated at the back or that such a card is available for installation (ref. 6761294 JOJO).

◗ That a UPS-secured outlet is available near to the **UPS** (L < 1m) as well as a telephone outlet (L < 4m).

Comet S31 7.5/10KVA

Installation (UPS de-energised)

◗ Clean the place where it is planned to fit the external unit using the solvent cleaning kit (see figures).

◗ Remove the protective adhesive under the external unit.

◗ Place the external unit as shown, according to the type of **UPS**.

◗ Press down hard for 10 seconds to fix the adhesive.

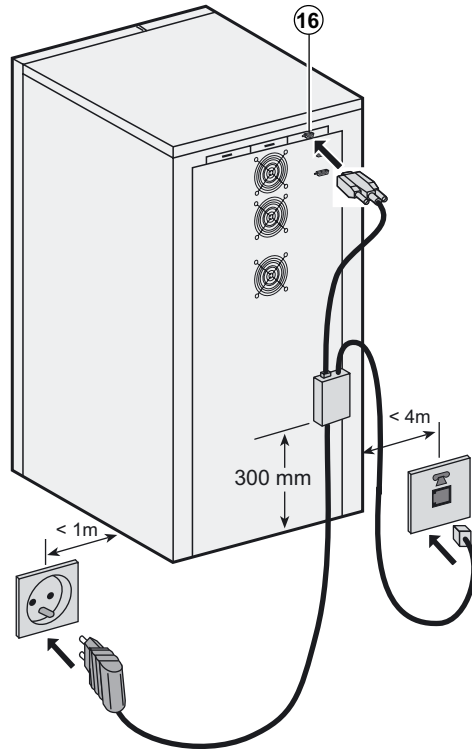◗ Configure the JBUS / RS485 card as shown in section 2.6 and place it in the recommended location.

Connections

◗ Connect one end of the power supply adapter cord to the back of the external unit (5V DC) and the other end to a UPS-secured outlet near to the **UPS**.

◗ Connect the external unit to the JBUS / RS485 communication card ⑯ using the supplied cable: wire T- on terminal T-, wire R+ on terminal R+, then the shielding.

◗ Connect one end of the telephone cable to the "phone" port on the external unit and the other end to the telephone outlet. If the wall outlet is not compatible with the connector on the cable, use an adapter.

◗ Fix the cables to the back of the UPS using the attached adhesive cable holders.

Comet S31 15/20KVA

Checking the indicator light (see section 1.5 "Indicator lights")

◗ Put the **UPS** back into operation.

◗ Check the status of the UPS green indicator light ⑩ :

- on steady for 5s (status 1 in the table),

- then regular flashing every second (status 3 in the table).

◗ Check the status of CD indicator light ⑨ :

- off for 5s,

- then regular flashing (status 3 in the table).

PowerServices TelPac is now ready for the parameter setting stage that is necessary for Teleservice.

Consult the Technical Support documentation.

Lastly, proceed to step 2 (see section 2.1 "Procedure").

2. Installation

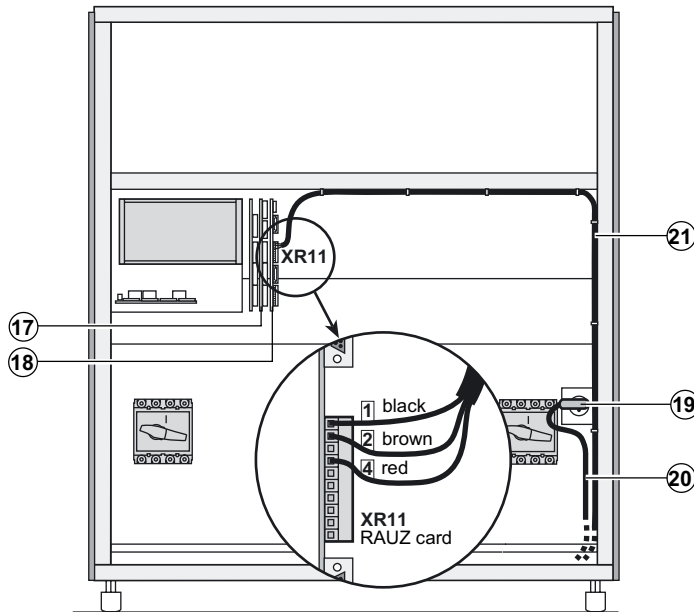## 2.9 Installing the PowerServices TelPac external unit for MGE™ Galaxy™ 6000/9000 UPSs

⚠️

Installation must be carried out by our technicians.
Installation of the PowerServices TelPac external unit requires UPS shut down, load tranfer to bypass and removal of three protective panels.
Refer to the UPS's user manual to carry out shut-down procedures in full compliance with safety procedures and instructions. Non-compliance with these may lead to safety hazards for the people concerned.

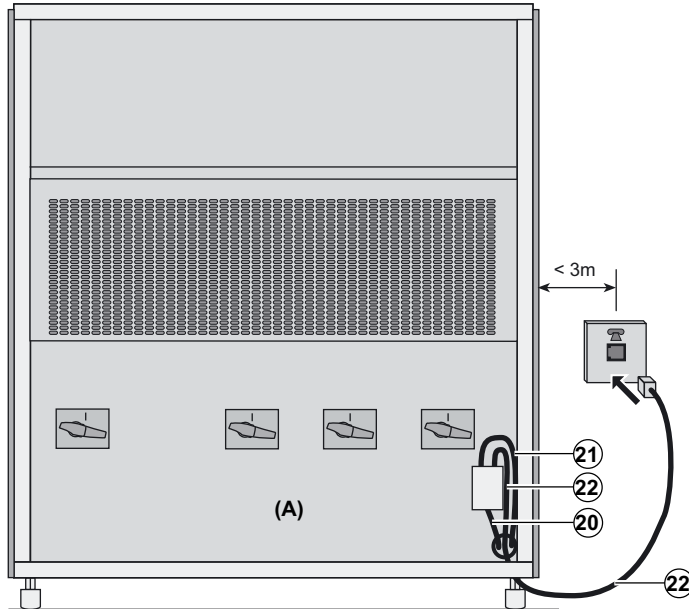**MGE™ Galaxy™ 6000 / 9000 view with doors open and protective panels removed**

☞

Installation, connections

1 - Open the doors giving access to the switch handles,

2 - Carry out the **UPS** shut-down procedure and remove the three protective panels,

3 - Check:

▸ that the **UPS** is equipped with at least one GTCZ communication card (17) and one RAUZ card (18).

▸ that a protected and UPS-secured outlet (19) is available.

4 - Configure the RAUZ and GTCZ card as indicated in section 2.6.

5 - Connect the power supply adapter to the UPS-secured outlet (19). Bring the power supply cord (20) out through the grommet in panel **A**.

6 - Connect, install then fix link cable (21). Bring the other end of the cable out through the grommet in panel **A**.

7 - Replace the protective panels.

MGE™ Galaxy™ 6000 / 9000 view with doors open and protective panels in place

8 - Clean the planned location for the external unit using the cleaning kit provided (see figure).

9 - Remove the adhesive protection from under the external unit.

10 - Place the unit as shown.

11 - Press down hard for 10 seconds to fix the adhesive.

12 - Connect the power supply cord ⑳ to the back of the external unit (5V DC).

13 - Connect the one end of the telephone cable ㉒ to the "phone" port on the external unit and the other end to the telephone outlet. If the wall outlet is not compatible with the connector on the cable, use an adapter.

14 - Connect the cable ㉑ to the JBUS / RS485 terminal block on the card:

- wire T- on terminal T-,
- wire R+ on terminal R+,
- shielding.

2. Installation

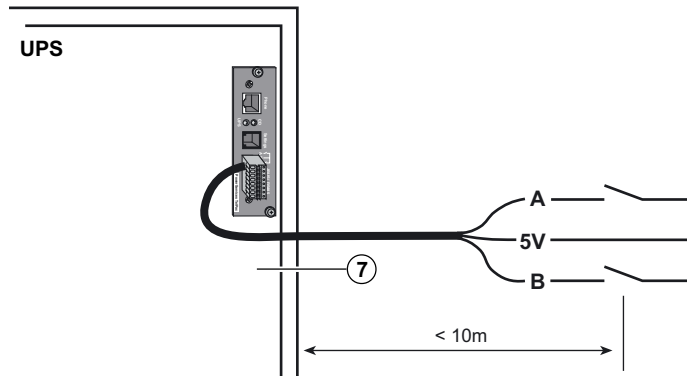**Checking the indicator lights** (see section 1.5 "Indicator lights")

▸ Put the **UPS** back into operation.
▸ Check the status of the green UPS indicator light ⑩:
- on steady for 5s (status 1 in the table),
- then regular flashing every second (status 3 in the table).
▸ Check the status of the CD indicator light ⑨:
- off for 5s,
- then regular flashing (status 3 in the table).

PowerServices TelPac is now ready for the parameter setting stage necessary for Teleservice.

Consult the Technical Support documentation. Lastly move on to step 2 (see section 2.1 "Procedure").

2.10 Connecting contact type inputs

PowerServices TelPac card (2 inputs)

Contact type inputs enable the connection of equipment without RS485 / JBUS links or equipment that is unknown to **PowerServices TelPac**.
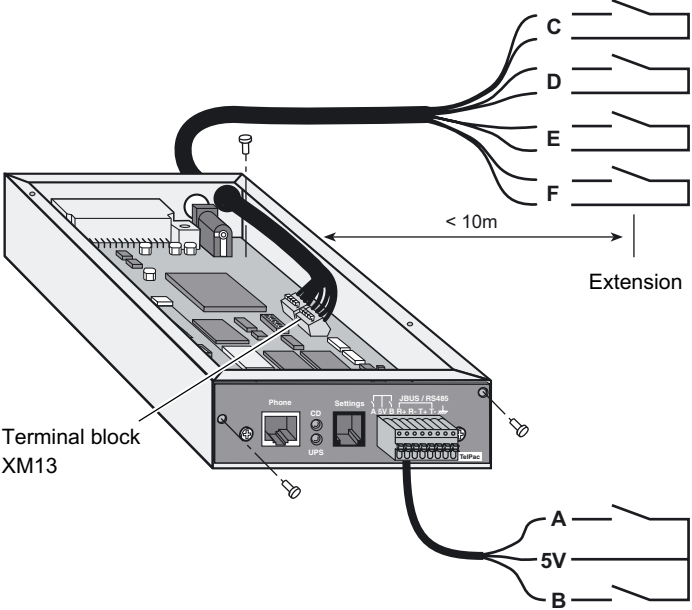
By default, closing of a contact causes an alarm to be sent to the Teleservice centre. The unit can also be configured to send an alarm when a contact opens.

The connection cable is not supplied.

PowerServices TelPac external unit (2 inputs + 4 extensions)

Terminal block XM13

Four similar inputs C, D, E, F are available inside the external unit on terminal block XM13.

To connect contacts to these four inputs, proceed as follows:

◗ Remove the cover (partly unscrew the screws and pivot the cover).

◗ Remove the card from the external unit (3 screws).

◗ Feed the cable through the grommet.

◗ Connect the cable(s) to terminal block XM13 as shown in the figure opposite.

◗ Replace the card in the external unit and fix it in place (3 screws).
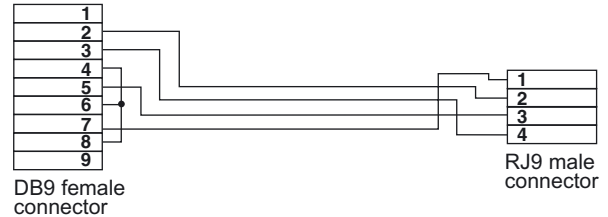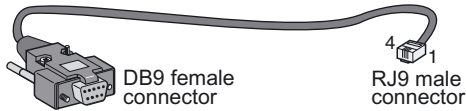
◗ Replace the cover.

PowerServices TelPac is now ready for the parameter setting stage required for Teleservice. Consult the Technical Support documentation. Lastly, move on to step 2 (see section 2.1 "Procedure").
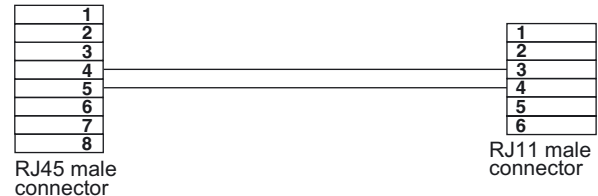
3. Maintenance

3.1 Cable diagrams

Serial cable (ref. 34003618)

DB9/RJ9 cable (2.5 m)

DB9 female connector

RJ9 male connector

Modem cable (ref. 34003729)

RJ45/RJ11 cable (5 m)

RJ45 male connector

RJ11 male connector

Comet link cable (ref. 34003747)

DB9/3-wire cable (0.9 m)

DB9 male connector

brown   T-
red   R+
black